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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO.            |
|---|-------------|----------------------|---------------------|-----------------------------|
| 10/735,903  | 12/16/2003  | Toshihiko Ouchi      | 03500.017662        | 3907                        |
| 5514  | 7590        | 05/25/2005           |                     |                             |
| FITZPATRICK CELLA HARPER & SCINTO<br>30 ROCKEFELLER PLAZA<br>NEW YORK, NY 10112 |             |                      |                     | EXAMINER<br>KANG, JULIANA K |
|   |             |                      |                     | ART UNIT<br>2874            |
|   |             |                      |                     | PAPER NUMBER                |

DATE MAILED: 05/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/735,903             | OUCHI, TOSHIHIKO    |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Juliana K. Kang        | 2874                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 10 March 2005.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1 and 3-18 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1 and 3-18 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

|  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____.   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/10/05</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____.                                   |

1. The request filed on March 10, 2005 for a Request for Continued Examination (RCE) under 37 CFR 1.114 is acceptable and a RCE has been established. An action on the RCE follows.

***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. **Claims 1, 3-6 and 8-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al (US 2004/0042705 A1, applied during the previous office action) and further in view of applicant's admitted prior art and Mizuno et al (U.S. Patent 4,267,587).**

Regarding claims 1, 3, 8-10 and 12, Uchida et al disclose an optical waveguide device comprising an optical waveguide layer (20), electrical wiring layer (16), optical elements (photo emitter [22] and photo detector [52]) mounted on a circuit board for receiving and emitting a light in a direction nearly perpendicular to an optical waveguide direction and an optical reflector having a projection shape (66) (see Figures 1 and 5). Uchida et al further disclose layers of conductive traces for interconnecting electronic components and devices mounted on the board and for electrically connecting the optoelectronic emitter and detector devices (see abstract and paragraph [0031]). However, Uchida et al do not teach a slab-type optical waveguide. Applicant states in the specification in page 2 lines 20-26 that having a slab type waveguide has excellent matching with an LSI chip, or a board or a package having the LSI chip mounted thereto

and is easy to be manufactured and also can be freely connected between chips as compared with a system for forming a line-shaped optical waveguide. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a slab type waveguide in Uchida et al instead of the optical fiber to improve coupling efficiency between the waveguide and the chips and to reduce the manufacturing cost as taught by applicant's admitted prior art. Uchida et al also do not teach a timing control signal that is an electrical signal obtained by dividing a clock frequency for the optical signal. Mizuno et al teach an electric clock with frequency divider having circuit modules to produce different types of timing and control signals. Using a timing control signal provides synchronized data processing which allows very high rates of data transfer. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a timing control signal of Mizuno et al in any communication system including Uchida et al and applicant's admitted prior art to improve the communication efficiency between chips.

Regarding claims 6 and 13-18, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, these limitations have not been given patentable weight.

Regarding claims 4 and 5, Uchida et al teach differently shaped reflector such as a polygonal pyramid and circular conical surface. The polygonal pyramid shaped reflector would transmit and receive a signal to and from only a partial area within the optical waveguide and the circular conical surface shaped reflector would transmit and receive a signal to and from the whole area within the optical waveguide.

Regarding claim 11, Uchida et al teach having one or more fiber carrier sheets (see paragraph [0015]).

4. **Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al and applicant's admitted prior art as applied to claim 1 above, and further in view of Melindo (U.S. Patent 4,845,702).**

As described above, Uchida et al and applicant's admitted prior art teach the claimed invention including using a clock signal. However, Uchida et al do not specifically teach an optical signal that is constituted by a packet signal train formed of a finite pulse train for time division packet switching. Melindo teaches high-speed packet switching eliminates the crosstalk and the network is easy to implement (see column 2 lines 31-50). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a packetized optical signal as taught by Melindo in Uchida et al and applicant's admitted prior art to eliminate the crosstalk and for easier implementation of the networking.

#### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1, 3-6 and 8-18 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

6. The prior art documents submitted by applicant have been considered and made of record (note the attached copy of form PTO-1449).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliana K. Kang whose telephone number is (571) 272-2348. The examiner can normally be reached on Mon. & Fri. 10:00-6:00 and Tue. & Thur. 10:00-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
JULIANA KANG  
PRIMARY EXAMINER  
